Computing

Intent

At Hyde Park Schools, we know that computing is a vital part of children's education in an ever-changing world. It provides them with opportunities to develop a range of ways in which they can explore their world, share, and express their thoughts and ideas, whilst learning about and making links with a wide spectrum of different types of information. Computing contributes to children's personal development in creativity, independence, judgement, and self-reflection. Moreover, it enables pupils to explore their natural sense of wonder and curiosity about the world around them and therefore links strongly to our school values. The focus is in developing digitally literate individuals who are able to mitigate the pitfalls and hazards that may present to them in today's digital world through an understanding of the technology used and being able to manipulate this through basic skills, computing science and safe practise.

The computing curriculum will develop children's abilities in coding and in error correction of their own and others' code through block code coding apps. It will also develop the children's skills in basic computer use through the use of word processing, data handling, presentation, email and graphics handling applications. Additionally, it provides opportunities to learn through modelling and simulation. Children will develop a digital intelligence by the explicit teaching of e-safety that enables understanding of the motives behind, and mitigation of, potential online threats. They will also develop critical evaluation of information that is accessed.

Implementation

At Hyde Park Schools, we teach a coherently sequenced procedural and non-procedural knowledge-based computing curriculum, which allows children to practise the skills needed as well as providing them with opportunities to practise and develop mastery in the key processes of computing. This starts with a curriculum based on the areas of the 2021 EYFS Framework. From year 1 it is aligned to the national curriculum and is taught through discrete skills lessons teaching basic skills which are then utilised through activities in other subject areas such as the foundation subjects and writing and maths. This allows children to embed their skills until they are second nature. Each year group has a progressive computing curriculum, building year on year starting with a basic skills unit and every year has an e-safety unit to compete building upon previous year's work. The children are given constructive verbal feedback and next steps, with further opportunities to improve their work and ensure that their skills are being developed. Work is shared with peers at different stages in the year to allow for peer evaluation. Children follow a progression aligned to the national curriculum objectives and skills building on those taught in EYFS and key stage 1 and building these further in key stage 2 to prepare them for key stage 3. These objectives are underpinned by a progression of both procedural and non-procedural knowledge indicators. These enable teachers and children to plan and track progress throughout the key stage. Each unit is assessed through observations, quizzes and applied use within other subjects.

Impact

Pupils' basic skills are assessed at entry and any shortfalls addressed in initial sessions. App skills are assessed against given tasks set within computing and other areas of the curriculum. In digital literacy and e-safety the children are assessed continuously during computer use with reminders throughout the year. The use of computing is recommended for home learning and the option of using computing for this is always given.
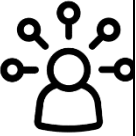
Progression

	EYFS					
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Key Vocabulary (repeated throughout the year through taught sessions and continuous provision)	Technology, computer, laptop, interactive board, Purple Mash, Mini Mash, avatar, touch, select, back, exit, save, iPad, CD player, monitor, speaker, type, choices, internet, safety, equipment, screen, mouse, image, keyboard, create, share, instructions, invention, forwards, backwards, go, stop, Beebot, click, apps, download, undo, search					
Skills (repeated throughout the year through taught sessions and continuous provision)	**Digital Literacy** Recognise technology that is used at home and in school Understand what a computer is and the different uses of computers i.e., learning, communicating, finding information, playing games Select an avatar to identify their login and understand the importance of Online Safety Use simple programs to complete an activity (Purple Mash/Mini Mash)		**Computer Science** Give commands/instructions e.g. forward, backwards, go, stop, when using simple software/hardware Make choices about the buttons/icons to press, touch or click on when using simple software/hardware Use a recording device to dictate a sentence Describe what they think a program will do Identify algorithms used in everyday life. Recognise that a string of instructions or commands placed together can create a simple program. Record the program used using symbols.		**Information Technology** Manage a device by correctly closing websites or apps and safely turning on and off. Input commands using the space bar, backspace, enter, letters and numbers on a keyboard on any device (including on a tablet). Input commands using a mouse to control a cursor and use the left click to select options OR use finger control to interact with a tablet/interactive boar (double tap, swipe) Experience simple apps and software and use these to present ideas.	
Knowledge Built on throughout the year	Children understand what is meant by technology and can identify a variety of examples both in and out of school. They can make a distinction between objects that use modern technology and those that do not e.g., a microwave vs. a chair.		Children can understand how to create, follow, and input a simple instruction		Children can follow simple instructions to safely explore digital content	

		Year 1					
		Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
		Online Safety & exploring Purple Mash (4 sessions)	**Grouping and Sorting (2 sessions), Pictograms (3 sessions)**	**Lego Builders (3 sessions) and Maze Explorers (3 sessions)**	**Coding (6 sessions)**	**Spreadsheets (3 sessions) and Technology Outside of School (2 sessions)**	**Animated Story Books (5 sessions)**
Key Vocabulary		alert, device, log, in, my, work, area, avatar, button, file, name, icon, log, out, menu, notification, private, password, save, search, resources, password, website, criteria, groups, sort, icon,	criteria, groups, sort, collect, data, compare, data, pictogram, record, results, title,	algorithm, code, computer, debugging, instructions, program, challenge, command, direction, instruction, left, and, right, route, undo, unit,	action, algorithm, background, code, coding, command, debug/debugging, event, execute, instruction, object, output, plan, programmer, properties, run,	button, calculations, cell, clipart, column, count tool, data, delete, image, lock cell, move cell, row, speak tool, spread sheet, value, computer, technology	animation, background, clip art gallery, E-book, edit, font, sound, sound effect, text
Skills		• To log in safely. • To learn how to find saved work in the Online Work area and find teacher comments. • To learn how to search Purple Mash to find resources. • To become familiar with the icons and types of resources available in the Topics section. • To start to add pictures and text to work. • To explore the Tools and Games section of Purple Mash. • To learn how to open, save and print.	• To sort items using a range of criteria. • To sort items on the computer using the 'Grouping' activities in Purple Mash. • To understand that data can be represented in picture format. • To contribute to a class pictogram. • To use a pictogram to record the results of an experiment	• To compare the effects of adhering strictly to instructions to completing tasks without complete instructions. • To follow and create simple instructions on the computer. • To consider how the order of instructions affects the result. • To understand the functionality of the direction keys. • To understand how to create and debug a set	• To understand the functionality of the direction keys. • To understand how to create and debug a set of instructions (algorithm). • To use the additional direction keys as part of an algorithm. • To understand how to change and extend the algorithm list. • To create a longer algorithm for an activity. • To set challenges for peers.	• To know what a spreadsheet program looks like. • To locate 2Calculate in Purple Mash. • To enter data into spreadsheet cells. • To use 2Calculate image tools to add clipart to cells. • To use 2Calculate control tools: lock, move cell, speak, and count. • To walk around the local community and find examples of	• To introduce e-books and the 2Create a Story tool. • To add animation to a story. • To add sound to a story, including voice recording and music the children have composed. • To work on a more complex story, including adding backgrounds and copying and pasting pages.

	• To understand the importance of logging out. • To sort items using a range of criteria. • To sort items on the computer using the 'Grouping' activities in Purple Mash.		• of instructions (algorithm). • To use the additional direction keys as part of an algorithm. • To understand how to change and extend the algorithm list. • To create a longer algorithm for an activity. • To set challenges for peers. • To access peer challenges set by the teacher as 2Dos.	• To access peer challenges set by the teacher as 2Dos.	where technology is used. • To record examples of technology outside school.	• To share e-books on a class display board.
Knowledge Repeated throughout the year	• Children understand the importance of keeping information, such as their usernames and passwords, private and actively demonstrate this in lessons. • Children take ownership of their work and save this in their own private space such as their My Work folder on Purple Mash.	• Children are able to sort, collate, edit and store simple digital content e.g., children can name, save and retrieve their work and follow simple instructions to access online resources, use Purple Mash 2Quiz example (sorting shapes), 2Code design mode (manipulating backgrounds) or using pictogram software such as 2Count.	• Children understand that an algorithm is a set of instructions used to solve a problem or achieve an objective. • They know that a computer program turns an algorithm into code that the computer can understand. • Children can work out what is wrong with a simple algorithm when the steps are out of order, e.g. The Wrong Sandwich in Purple Mash and can write their own simple algorithm, e.g.,	• Children understand that an algorithm is a set of instructions used to solve a problem or achieve an objective. • They know that a computer program turns an algorithm into code that the computer can understand. • Children can work out what is wrong with a simple algorithm when the steps are out of order, e.g. The Wrong Sandwich in Purple Mash and can write their own simple	• Children are able to sort, collate, edit and store simple digital content e.g., children can name, save and retrieve their work and follow simple instructions to access online resources, use Purple Mash 2Quiz example (sorting shapes), 2Code design mode (manipulating backgrounds) or using pictogram software such as 2Count. • Children understand what	• Children are able to sort, collate, edit and store simple digital content e.g., children can name, save and retrieve their work and follow simple instructions to access online resources, use Purple Mash 2Quiz example (sorting shapes), 2Code design mode (manipulating backgrounds) or using pictogram software such as 2Count.

			• Colouring in a Bird activity. • Children know that an unexpected outcome is due to the code they have created and can make logical attempts to fix the code, e.g. Bubbles activity in 2Code. • When looking at a program, children can read code one line at a time and make good attempts to envision the bigger picture of the overall effect of the program. Children can, for example, interpret where the turtle in 2Go challenges will end up at the end of the program.	• algorithm, e.g., Colouring in a Bird activity. • Children know that an unexpected outcome is due to the code they have created and can make logical attempts to fix the code, e.g. Bubbles activity in 2Code. • When looking at a program, children can read code one line at a time and make good attempts to envision the bigger picture of the overall effect of the program. Children can, for example, interpret where the turtle in 2Go challenges will end up at the end of the program.	• is meant by technology and can identify a variety of examples both in and out of school. • They can make a distinction between objects that use modern technology and those that do not e.g. a microwave vs. a chair.	

		Year 2					
		Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
		Coding (6 sessions)	Online safety (3 sessions) and spreadsheets (4 sessions)	Questioning (5 sessions)	Effective searching (3 sessions) and making music (3 sessions)	Creating pictures (5 sessions)	Presenting ideas (4 sessions)
Key Vocabulary		action, algorithm, background, bug, button, click, events, collision, detection, command, debug/debugging, event, execute, implement, instructions, interaction, interval, object, output, properties, run	attachment, digital, filter, email, filter, internet, personal, information, private, information, search, secure, sharing block, graph, cell, column, copy, count, tool, data, drag, equals, equals, tool, label, row, speak, tool, total, table	binary, tree, data, database, field, pictogram, question, record, search, sort	digital, footprint, domain, internet, network, search, engine, web, address, world, wide, web, we, page, web, site, beat, compose, note, tune, sound effect, soundtrack, speed, tempo, volume	art, fill, impressionism, palette, pointillism, style, surrealism	E-Book, fact file, fiction, mind map, node, non-fiction, presentation, quiz
Skills		• To understand what an algorithm is. • To create a computer program using an algorithm. • To create a program using a given design. • To understand the collision detection event. • To understand that algorithms follow a sequence. • To design an algorithm that follows a timed sequence. • To understand that different objects have different properties. • To understand what different events, do in code. • To understand the function of buttons in a program. • To understand and debug simple programs.	• To know how to refine searches using the Search tool. • To use digital technology to share work on Purple Mash to communicate and connect with others locally. • To have some knowledge and understanding about sharing more globally on the Internet. • To introduce Email as a communication tool using 2Respond simulations. • To understand how we should talk to others in an online situation. • To open and send simple online communications in the form of email. • To understand that information put online leaves a digital footprint or trail. • To identify the steps that can be taken to keep personal data and hardware secure.	• • To learn about data handling tools that can give more information than pictograms. • To use yes/no questions to separate information. • To construct a binary tree to identify items. • To use 2Question (a binary tree database) to answer questions. • To use a database to answer more complex search questions. • To use the Search tool to find information.	• To understand the terminology associated with searching. • To gain a better understanding of searching on the Internet. • To create a leaflet to help someone search for information on the Internet. • To make music digitally using 2Sequence. • To explore, edit and combine sounds using 2Sequence. • To edit and refine composed music. • To think about how music can be used to express feelings and create tunes which depict feelings. • To upload a sound from a bank of sounds into the Sounds section.	• • To learn the functions of the 2Paint a Picture tool. • To learn about and recreate the Impressionist style of art (Monet Degas Renoir). • To recreate Pointillist art and look at the work of pointillist artists such as Seurat. • To learn about the work of Piet Mondrian and recreate the style using the lines template. • To learn about the work of William Morris and recreate the style using the patterns template. • To explore surrealism and eCollage.	• To explore how a story can be presented in different ways. • To make a quiz about a story or class topic. • To make a fact file on a non-fiction topic. • To make a presentation to the class.

		• To use 2Calculate image, lock, move cell, speak, and count tools to make a counting machine. • To learn how to copy and paste in 2Calculate. • To use the totalling tools. • To use a spreadsheet for money calculations. • To use the 2Calculate equals tool to check calculations. • To use 2Calculate to collect data and produce a graph.		• To record and upload environmental sounds into Purple Mash. • To use these sounds to create tunes in 2Sequence.		
Knowledge	• Children can explain that an algorithm is a set of instructions to complete a task. • When designing simple programs, children show an awareness of the need to be precise with their algorithms so that they can be successfully converted into code. • Children can create a simple program that achieves a specific purpose. They can also identify and correct some errors, e.g., Debug Challenges: Chimp. • Children's program designs display a growing awareness of the need for logical, programmable steps. • Children can identify the parts of a program that respond to specific events and initiate specific actions. For example, they can write a cause and effect sentence of what will happen in a program.	• Children know the implications of inappropriate online searches. • Children begin to understand how things are shared electronically such as posting work to the Purple Mash display board. They develop an understanding of using email safely by using 2Respond activities on Purple Mash and know ways of reporting inappropriate behaviours and content to a trusted adult. • Children demonstrate an ability to organise data using, for example, a database such as 2Invesitigate and can retrieve specific data for conducting simple searches. • Children are able to edit more complex digital data such as music compositions within 2Sequence. • Children are confident when creating, naming, saving and retrieving content. • Children use a range of media in their digital content including photos, text and sound.	• Children demonstrate an ability to organise data using, for example, a database such as 2Investigate and can retrieve specific data for conducting simple searches. • Children are able to edit more complex digital data such as music compositions within 2Sequence. • Children are confident when creating, naming, saving and retrieving content. Children use a range of media in their digital content including photos, text and sound.	• Children can effectively retrieve relevant, purposeful digital content using a search engine. They can apply their learning of effective searching beyond the classroom. • They can share this knowledge, e.g., 2Publish example template. Children make links between technology they see around them, coding and multimedia work they do in school e.g., animations, interactive code and programs. • Children know the implications of inappropriate online searches. • Children begin to understand how things are shared electronically such as posting work to the Purple Mash display board. They develop an understanding of using email safely by using 2Respond activities on	• Children demonstrate an ability to organise data using, for example, a database such as 2Invesitigate and can retrieve specific data for conducting simple searches. • Children are able to edit more complex digital data such as music compositions within 2Sequence. Children are confident when creating, naming, saving and retrieving content. Children use a range of media in their digital content including photos, text and sound.	• Children can explain that an algorithm is a set of instructions to complete a task. When designing simple programs, children show an awareness of the need to be precise with their algorithms so that they can be successfully converted into code. • Children can create a simple program that achieves a specific purpose.

					• Purple Mash and know ways of reporting inappropriate behaviours and content to a trusted adult. • Children demonstrate an ability to organise data using, for example, a database such as 2Invesitigate and can retrieve specific data for conducting simple searches. • Children are able to edit more complex digital data such as music compositions within 2Sequence. • Children are confident when creating, naming, saving and retrieving content. • Children use a range of media in their digital content including photos, text and sound.		They can also identify and correct some errors, e.g., Debug Challenges: Chimp. • Children's program designs display a growing awareness of the need for logical, programma ble steps. • Children can identify the parts of a program that respond to specific events and initiate specific actions. For example, they can write a cause and effect sentence of what will happen in a program.